

Chapter 3.0

Pre-conceptual Phase Activities

The Pre-conceptual Phase is a preliminary stage of project activity which precedes the formal start of a project. During the Pre-conceptual Phase a DOE program begins to identify the need for a project, and initiates action to sponsor a development effort. The program will produce a *Mission Need Document* and evaluate initial proposals to determine if the documented need actually supports the missions, goals, and objectives of the Department and program. The costs associated with conducting Pre-conceptual Phase activities are not considered part of a project's total project cost or its life cycle cost.

Part of the documentation for the Pre-conceptual Phase is a budget request for conducting Conceptual Phase activities including the *Conceptual Design* [DOE O 430.1 - Attachment 1: Definitions: 6. Conceptual Design] effort and Project Execution Planning activities. The Pre-conceptual Phase closes with a first *Critical Decision* entitled *Approve Mission Need*. If the decision is to approve it, then the project continues to a *Conceptual Phase*.

[GPG_01 Project Management Overview: Section 3.1 Pre-conceptual Activities]

3.1 Process Flow Chart: Pre-conceptual Phase Activities and Budget Scheduling

[Pre-conceptual Activities (graphic): Precon.GIF]{.EXE} - Sample included as Figure 3-1 as extracted from the DOE FM-20 Project Management Process Model.

3.2 Checklist of Items Needed to Complete the Pre-conceptual Phase

The following items are mandatory requirements for the Pre-conceptual Phase:

- ☐ Mission Need Document [Section 3.5: Project Mission Need Document]
- ☐ Project Authorization request for Mission Need, CD-1, and start of conceptual design.

To assist in the preparation of the Conceptual Design Plan (CDP) the following questions should be considered:

- ☐ Is the project included in current site planning considerations?
- ☐ Does the proposed project have a clearly defined sponsor?
- ☐ Can the sponsoring organization fund a **Pre-conceptual** development activity?
- ☐ Have other stakeholders been identified and consulted about the proposed project?
- ☐ Has a mission analysis been conducted and documented?
- ☐ Are the project's proposed objectives consistent with the DOE Strategic Plan's goals and objectives? HQ program plan goals and objectives? AL annual performance plan objectives?
- ☐ Has a set of preliminary technical functional and operating requirements been developed?

- ☐ For new facilities, have siting evaluation factors and site selection criteria been established?
- ☐ Have preliminary estimates of TEC, TPC and LCC been developed?
- ☐ Has a preliminary project funding profile been developed?
- ☐ Has a budget for conducting the conceptual phase been prepared?
- ☐ Has a preliminary milestone schedule been developed?
- ☐ Have preliminary ES&H requirements and issues been identified?
- ☐ Has a preliminary project risk assessment and vulnerability analysis been prepared?
- ☐ Have preliminary acquisition issues and strategies been identified and evaluated?
- ☐ Has a project mission need request and mission need document been prepared?

3.3 Integrated Site Planning

AL developed a AL Comprehensive Integrated Site Planning Functional Requirements Document (FRD) in order to implement the LCAM process in DOE/AL and to promote some best business practices. The document defines a minimum set of expectations relative to the AL site planning process. [\[Site Planning Functional Requirements Document\]](#)

The AL Site Planning FRD required Integrated Comprehensive Asset Management Planning (ICAMP) Report [\[Site Planning FRD: Program Element 3.0, Reporting and Deliverables\]](#) provide DOE with clear, accurate, timely and more complete information on site life cycle plans and on the condition of site facilities and infrastructure.

Overall, the ICAMP provides AL site managers with a sounder expectation of the site planning process for contractors, and it establishes a required set of deliverables. Project management personnel should become familiar with the ICAMP document and its associated processes. The ICAMP process is a more comprehensive approach to facility siting, and its related integrated program elements such as information gathering, management and analysis, life cycle planning, reporting and deliverables, performance reviews, and required administration and organization. ICAMP also incorporates requirements for surplus facilities and land transfer activities.

Each DOE site is required to develop an ICAMP report per the prescribed outline [\[Site Planning FRD Attachment A ICAMP Report Outline\]](#). Also, any new proposed project should be included in the ICAMP as a prerequisite for to seeking approval for a conceptual design, validation and budgeting process. Thus, the ICAMP becomes the starting point for generating new proposals for facilities-related projects in AL. [\[Site Planning FRD\]](#)
[\[GPG_02: Critical Decision Criteria: Sec. 2.2.1 Mission/Goal/Program Criteria\]](#)
[\[GPG_24: Site Selection\]](#)

3.4 Program Sponsorship

Any DOE office or contractor may originate a need, opportunity or requirement for a project. In most cases, a single point of contact is established in the field as the organization which will be responsible for conducting, supporting or managing a proposed project. This field point of

contact will prepare or support the development of the pre-conceptual documents, including the Mission Need Document and the Conceptual Design Plan. DP, for example, also requires its HQ Office of Construction (DP-40) to support the process by reviewing field inputs, assisting the development of the documents, guiding the field on DP strategic plan priorities, and following the documents during HQ review and decision periods. HQ program offices also play a major role in this sponsorship process by leading the overall effort and approving or concurring in the project proposals.

A sponsor's initial role is to develop the pre-conceptual documentation. In the Pre-conceptual Phase the sponsor will need to take a very active role in developing the plans and analyses required to launch the project through the Mission Need Approval Critical Decision. Later, the Program Manager may need to represent the project in a variety of circumstances including budget validations, program priority setting meetings, ES&H reviews, Critical Decision reviews, and so forth.

The program sponsor will also need to coordinate the project with landlords at sites where the sponsor's program organization does not have primacy. For example, an EM project conducted at a DP program site will need its program manager/sponsor to coordinate the Mission Need development, and subsequent project planning with a landlord program.

[\[GPG_01: Project Management Overview: Sec. 3.1.1 - Program Sponsor\]](#)

[\[JPODPM: Sec. 4.a. \(1\) Approval of Mission Need Critical Decision\]](#)

A project sponsor must also set aside resources for conducting the **Pre-conceptual** activities. During the **Pre-conceptual** Phase there is much to do to move a proposed project through the development of a complete set of Mission Need documents to support project approval at CD-1.

3.5 Project Mission Need Document

The Mission Need documentation is required by LCAM and JPODPM before conceptual design can commence, and may be prepared by either HQ or the Field. Based upon graded approach considerations, Mission Need documentation should address the following issues:

- a brief description of the proposed mission need;
- preliminary technical functional requirements;
- a preliminary schedule;
- a rough-order-of-magnitude estimate for Total Project Cost; including
- a specific cost estimate for conceptual design;
- a preliminary acquisition strategy;
- a preliminary risk assessment;
- preliminary environmental (NEPA) strategy;
- identification of project technical and organizational interfaces; and
- integration with other projects and activities.

[JPODPM (1) Pre-conceptual activities: Program Direction for Mission Need Documentation - page 5]

The overall purpose of Mission Need documentation is to provide decision-makers with sufficient information to determine whether the candidate project merits funding for a Conceptual Design effort. The Mission Need is revisited by the appropriate decision makers at **each critical decision point** in every projects' life cycle, and it is revalidated during each budget and funding cycle.

[AL PM Handbook: Table 2.1: AL Critical Decision Approvals - DP, EM, ER, RW]
[AL PM Handbook: Chapter 9.1 OMB Circular A-11, Part 3: Planning and Budgeting for the Acquisition of Fixed Assets]
[AL PM Handbook: Chapter 9.2 Prioritization Guidance and Models: GPG_30]

To prepare the Mission Need documents, the program office, in conjunction with the originating office and other interested parties, should undertake a systematic approach for developing the information and assessments of the circumstances, issues and drivers which support the prospective project. The recommended actions for developing a systematic and comprehensive Mission Need document include the following:

- Conduct a thorough *mission analysis*, which is an examination the current state of events, the desired outcomes, and the requirements and end-products needed to achieve the outcomes. Mission analysis should examine the entire asset life cycle using a systems engineering approach. **[AL PM Handbook: 27.2 - Conduct a Mission Analysis]**
- Prepare a *mission need assessment* which is a comprehensive review of the proposed project's statement of need, scope, boundaries and constraints compared with the DOE Strategic Plan and program office's Program Plans. **[AL PM Handbook: 27.3 - Prepare a Mission Need Assessment]**
- Develop the project's *minimum technical functional requirements* which focus on the high level issues such as decision criteria for technical objectives, stakeholder values, results and outcomes and end-products. **[AL PM Handbook: 27.4 - Develop the Project's Minimum Technical Functional Requirements]**
- Forecast the project's *cost and schedule ranges* which include financial management requirements, funding profiles, mortgage impacts, funding priority, funding sources and methods, and projected cost and schedule baseline elements including TEC, TPC, LCC and major milestones. **[AL PM Handbook: 27.5 - Forecast the Project's Cost and Schedule Ranges]**
- Prepare a *preliminary environmental strategy* and a *safety and health assessment* examining ES&H issues and concerns which may impact the project during its life cycle. This ES&H assessment should examine "show-stoppers" which adversely effect a project including the

NEPA approach, waste minimization and prevention issues, and safety elements.

[AL PM Handbook: 27.6 - Prepare a Preliminary Environmental Strategy, and a Safety and Health Assessment]

[AL PM Handbook: 22.3 Pre-conceptual Phase Safety Requirements]

[AL PM Handbook: 23.5.4 Scheduling Considerations for Permitting]

- Develop a *strategy for technical and organizational interfaces* which includes acquisition strategy and methods, project management approach, and stakeholder participation and involvement. **[AL PM Handbook: 27.7 - Prepare a Strategy for Technical and Organizational Interfaces]**
- Prepare a *strategy for integration with other projects and activities* which addresses such issues as sharing common facilities with other projects and activities, sharing common facilities, site access requirements, utility demands, on-site personnel and resources, and perhaps, Safeguards and Security concerns. **[AL PM Handbook: 27.8 - Prepare a Strategy for Integration with Other Projects and Activities]**

A **[sample Mission Need Document]** is connected to this handbook

3.6 Project Mission Need Request Processing

DOE AL's mission need approval process runs concurrently with the initial request for project authorization. A DOE Project Manager will be designated by an Area Office or a Project Office, and this Project Manager will be tasked to prepare a Project Authorization form. **[AL PM Handbook: 11.2 Instructions for Preparing Project Authorization AL Projects]** Note, the work authorization being requested is the authority to prepare a Conceptual Design Report, and the funding source will be Operating Expense (OPEX) funds. OPEX funds will also be used to support the NEPA process, preliminary safety assessment/risk analysis efforts, and other Conceptual Phase activities. The Conceptual Design Documents (CDD), Design Criteria, Project Execution Plan (PEP) and other project documentation can be budgeted and charged as Other Project Cost (OPC) elements within the TPC.

For requesting authorization for the conceptual design, and thus, approval of a Mission Need document, the important element of the Project Authorization form is the Description of Work section. It is recommended that the Project Manager refer to the Mission Need document, the purposes of the proposed project, any details about the plan for conducting the conceptual design, and, most important, clearly indicate that authorization is being requested for conducting a conceptual design activity to support the proposed project. The process for approving the Mission Need and the Project Authorization is variable based upon the size, scope and special designation of the project. Approval levels are currently set forth in the JPODPM **[AL PM Handbook: Table 2.1: AL Critical Decision Approvals - DP, EM, ER, RW Programs]**

3.7 CD-1 Mission Need Approval Process/Requirements/Roles

Again, Mission Need approval process is variable based upon the size, scope, and special designation of the project. Approval levels are set forth in the JPODPM [AL PM Handbook: Table 2.1: AL Critical Decision Approvals - DP, EM, ER, RW Programs].

The Director of Project and Facility Management Division, AL is charged with the responsibility of coordinating the concurrence on approval of Mission Need. Approvals vary with the DOE program and decision thresholds.

References:

AL Memorandum Critical Decision Authority Levels - EM30 Programs 4/11/96

HQ Memorandum Critical Decision Authority Levels - EM-30 Programs 3/25/96.

For General Plant Projects (GPP) with a Total Project Cost (TPC) of less than \$ 2 million, the approving official is the Director, AL/PFMD.

For Other Line Item Projects (OLI) with a (TPC) less than \$ 50 million, the approving official will be the sponsoring HQ Program Manager or the Program Secretarial Officer (PSO).

For Other Line Item Projects (OLI) with a (TPC) greater than \$ 50 million but not designated as a Strategic System, the approving official will be the sponsoring HQ Program Manager or the Program Secretarial Officer (PSO).

For Other Line Item Projects (OLI) with a (TPC) greater than \$ 100 million, the approving official will be the sponsoring HQ Program Manager or the Program Secretarial Officer (PSO). In addition, the Mission Need documents may need to be routed through a Program/Project Decision Advisory Board (PDAB), which is a headquarters program level board which advises the decision maker about the environmental, legal, financial, acquisition and administrative policy implications of the proposed project. Reference: *HQ FM Memorandum, ESAAB Procedures: 2/20/96: VIII. Program/Project Decision Advisory Board.*

Strategic Systems Projects (SS) are designated by the Secretary, usually with a (TPC) greater than \$ 400 million and high visibility (i.e.; national urgency, high risk, international implications, or stakeholder interests) the approving official will be designated by the Secretary. In addition, the Mission Need documents may need to be routed through an Energy Systems Acquisition Advisory Board (ESAAB), which is a headquarters level board which advises the decision maker about the environmental, legal, financial, acquisition and administrative policy implications of the proposed project. Reference: *HQ FM Memorandum, ESAAB Procedures: 2/20/96: VIII. Program/Project Decision Advisory Board*